CLAIMS

What is claimed is:

1.   1.   A computer system, comprising:

2   a hard disk drive having a recording disk on which a plurality of sectors are

3   formed, wherein said hard disk drive holds sector range information that denotes a

4   range of specific sectors among said plurality of sectors on said recording disk with

5   a parameter of a two-dimensional direction along a surface of said recording disk,

6   said specific sectors being set as sectors excluded from reading or writing of data;

        and

        a host unit for instructing said hard disk drive to read or to write data.

1   2.   The computer system of Claim 1, wherein said sector range information includes
2   a reference position of said specific sector range, the number of said specific sectors
3   continued in the circumferential direction of said recording disk, and the number of said
4   specific sectors continued in the radial direction of said recording disk.

1   3.   The computer system of Claim 1, wherein said some specific sectors are defect
2   sectors to be registered as unusable sectors.

1   4.   The computer system of Claim 1, wherein

said host unit stores first positional information about a sector of said
recording disk and specifies a target sector from/in which data is to be read/written
according to said first positional information so as to instruct said storage unit to
read/write data therefrom/therein, and

said hard disk drive, at the time of reading/writing data according to a
command from said host unit, obtains second positional information including said
first positional information and said sector range information so as to identify said
9   target sector according to said second positional information.

1   5.   The computer system of Claim 4, wherein said first positional information is a
2   logical address held by said host unit, and said second positional information is a physical
3   address.

1   6.   A hard disk drive, comprising:

2   a recording disk on which a plurality of sectors are formed;

3   a head assembly having a head that reads/writes data from/on said recording

4   disk;

5   a controller for controlling said head assembly to read/write data from/to said

6   recording disk, wherein said controller includes:

7   a defect sector positional information holding device that holds

8   positional information of a defect sector disabled to read/write data

9   therefrom/thereto said recording disk, wherein said positional

10   information includes a number of said defect sectors continued in a

11   circumferential direction and in a radial direction of said recording

12   disk; and

13   a sector identification device that refers to said positional information

14   of said defect sector so as to identify a target sector from/in which

15   data is to be read/written when a read/write command is received.

7.   The hard disk drive of Claim 6, wherein said defect sector positional information holding device is set in a memory that stores data to be processed in said hard disk drive; and said defect sector positional information is stored on said recording disk and read from said recording disk so as to be output to said memory during a start up of said hard disk drive.

8.   The hard disk drive of Claim 6, wherein said positional information includes information for denoting that a plurality of defect sectors are registered as one block when said plurality of defect sectors are continued either in a circumferential direction or in a radial direction of said recording disk.

1 9. A method for registering a defect map within a hard disk drive, said method
2 comprising:

3 accepting specification of a sector from/in which data is to be read/written
4 from a host computer;

5 obtaining a physical address of said specified sector with reference to
6 information of a range in which said defect sectors exist; and

7 reading/writing data from/in said specified sector according to said obtained
physical address.

1   10.   The method of Claim 9, wherein said specification accepting step accepts

2   specification of a sector from said host computer according to a logical address that does

3   not provide any consideration to any defect sector on said recording disk.

1   11.   The method of Claim 10, wherein said positional information obtaining step, when

2   it is found that the number of said tracks is 1 in said range information that denotes

3   presence of defect sectors continued up to just before said specified sector as a result of

4   searching sectors on said recording disk sequentially in a predetermined order, adds up the

5   logical address of said specified sector and the number of defect sectors continued up to

6   said sector so as to obtain the physical address of said specified sector.

12.   The method of Claim 10, wherein said positional information obtaining step, when

it is found that the number of tracks is 2 or over in said range information that denotes

presence of defect sectors continued up to just before a specified sector and said specified

sector is not included in said range information as a result of searching sectors on said

recording disk sequentially in a predetermined order, adds up the logical address of said

specified sector and the number of defect sectors continued up to just before said specified

sector so as to obtain the physical address of said specified sector.

1   13.   A method for registering a defect map that denotes the position of each defect sector

2   among sectors formed on a recording disk, said method comprising:

3   setting a sector as a defect sector when said sector being among those

4   formed on said recording disk does not satisfy a predetermined standard; and

5   registering a plurality of defect sectors continued either in the circumferential

6   direction or in the radial direction of said recording disk as one block in a defect

7   map according to the information including the position of the first defect sector,

8   the number of said defect sectors continued in a track of said recording disk, the

9   number of tracks in which said defect sectors are continued in the radial direction

10   of said recording disk.

1   14.   The method of Claim 13, wherein the number of said sectors, when it is two or

2   over, is registered in said defect map so as to have the same value among tracks.

1   15.   The method of Claim 13, wherein the number of tracks, when it is 2 or over, is

2   registered in said defect map so as to avoid presence of two or more defect sector blocks

3   in one and the same track.